



## Towards resilient cities in Ghana: Insights and strategies

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### ABSTRACT

This article reports on a research conducted in major Ghanaian cities of Accra and Kumasi that explored urban planners' perspectives on the urban resilience philosophy, and evaluated the available strategies for absorbing disturbances (e.g., floods, rapid population growth, and slum development) while retaining the identity, structure and functionality of Ghanaian cities. Using social science research methods including in-depth interviews with urban planners, and document reviews, findings indicate that despite global urgency towards urban resilience and some level of understanding amongst urban planning professionals, there is no consideration for resilience philosophy in urban planning practice in Ghana. The policy implications of these findings are further presented.

### 1. Introduction

Since the concept of resilience was first used in urban planning in the late 1990s (Mileti, 1999), the term has emerged as a major focus of research and policy in urban planning practice and in the field of urban studies, sometimes under synonymous terms such as sustainable urban development or sustainable development (Adger, 2003; Brand & Jax, 2007; Davoudi et al., 2012; Perrings, 2006). The proliferation of recent publications illustrates this development, as does the growing number of specialised policy programmes (Adger, 2003; Campanella, 2006; Folke et al., 2002; Perrings, 2006; Prasad et al., 2009; United Nations (UN), 2012; United Nations International Strategy for Disaster Reduction UNISDR, 2010, 2013; Wallace & Wallace, 2008). Evidence of its formalisation and institutionalisation includes organisation of International Council for Local Environmental Initiatives (ICLEI) conferences since 2010 such as the 'Resilient Cities 2012 Congress' in Bonn, Germany (ICLEI, 2012), the United Nations International Strategy for Disaster Reduction [UNISDR] campaign in 2010 entitled 'Making Cities Resilient' (UNISDR, 2010), and publications in a number of reputed peer-reviewed journals addressing urban resilient issues such as *Habitat International*, *Cities* and *International Journal of Disaster Resilience in the Built Environment*. Within the African continent, the recognition of the concept in the urban planning regime is reflected in the formation of resilience research based initiatives including *Urban African Risk Knowledge* (*Urban ARK*), *Weathering the Storm* and *PeriperiU*.

Consensus indicates that the urban resilience concept, when applied, is an appropriate approach for effective and efficient management of cities in this era of rapid urban population growth and severe climate change impacts especially in developing countries (Poku-Boansi & Cobbinah, 2018). Nevertheless, urban planning regimes and systems in developing countries particularly Africa are ineffective (Cobbinah, Erdiaw-Kwasi, & Amoateng, 2015). In fact, several studies (Cohen, 2006; Simon, 2007; United Nations (UN), 2012; Waters, 2012) have reported on the weaknesses of, and criticised the urban planning regimes in many African cities, basically exposing their lack of improvement in welfare and loss of focus on community aspirations, contrary to their purpose. As a consequence, there are increasing calls by both practitioners and academics for their revision and adoption of resilient strategies,

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especially at a time when the world, particularly developing countries, is faced with complex urban planning and management challenges such as climate change impacts (e.g., floods) and rapid urban population growth (Cobbina et al., 2015; Cohen, 2006; Darkwah & Cobbina, 2014; United Nations (UN), 2012). In fact, some local level context specific governance approaches necessary for planning resilient cities, such as adaptive management capacity and the ability to foster flexibility of planning agencies, are even being promoted by international and donor agencies and researchers (Evans, 2011).

At any rate, there is limited knowledge on the understanding of the resilience concept, and approaches for building resilient cities in Africa and other developing countries (Poku-Boansi & Cobbina, 2018; Waters, 2012). This situation suggests the need for an in-depth local level research that provides evidence of the extent of appreciation of the urban resilience concept, and how insight from the concept is guiding planning and development approaches and interventions at the local level. This, of course, is not to say that no study has ever been conducted on resilience in African cities. A number of urban resilience studies in the region have been undertaken; for example Darkwah and Cobbina (2014) and Cobbina and Darkwah (2016c) found that the concept of urban resilience, when applied, is relevant and necessary in recovering depleted green spaces in African cities. Also, Poku-Boansi and Cobbina (2018) found that urban planning policies in Ghana advance some principles of resilience more than others, a situation that has contributed to limited capacity of Ghanaian cities in terms of building resilience. Similar findings in terms of limited resilience capacity were reported in Kampala (Uganda) by Waters (2012).

However, the aforementioned studies often focus on an aspect of the urban resilience concept (e.g., urban greenery, planning policies). There are several aspects of the resilience concept which are germane to urban planning and management regimes in Africa, including *inter alia*: local understanding of the concept; the integration of urban resilience philosophy into local planning interventions; and the acceptance of the concept as a sustainable development path. Meanwhile urban planning literature on Africa tends to focus largely on the challenges of unplanned urbanisation, and climate change impacts, as well as ineffective urban planning regimes (see for example, Cobbina et al., 2015; Cohen, 2006; Pieterse & Simone, 2013). Compounding the problem is the growing amount of case-study research reporting on the failure of cities, particularly in developing countries, to achieve the ideal goal of urban resilience (Cohen, 2006; United Nations (UN), 2012; Waters, 2012). For example, many cities in developing countries such as New Delhi (India), Nairobi (Kenya), Accra (Ghana) and Kampala (Uganda) are increasingly finding it difficult to respond to and recover from the risks imposed by rapid urban population growth and climate change such as flooding and mushrooming of slum settlements (Cohen, 2006; Pelling & Wisner, 2012; Simon, 2007; United Nations (UN), 2012; Waters, 2012). Regrettably, in many African cities, the concept of urban resilience is being advocated in the absence of widespread recognition of the practical city-level conditions under which it may be best promoted, managed and evaluated (see Poku-Boansi & Cobbina, 2018; Waters, 2012). This requires that more research be conducted to understand, and analyse the benefits and conditions of the urban resilience concept in African cities.

This present study contributes to addressing the growing gap between urban resilience as espoused by its advocates and its application from urban planners' perspective in Africa, using Ghana as a case study. The aim is to provide local level evidence of understanding of the urban resilience concept from the perspectives of urban planners in Ghana, and evaluate their strategies for advocating the concept, with the view to contributing to the debate in the literature and also to aid planning and management of cities. It is argued that urban resilience concept, when applied, can generate urban planning and management benefits for Ghanaian cities. However, these benefits should be evaluated and be based on local situations and reflect community aspirations to provide a more convincing basis for analysing the appropriateness of the concept. The paper is organised as follows: Section 2 presents literature on the importance of planning for resilient cities in Africa. Section 3 discusses the case study area and further examines the research methods used. Section 4 presents the results of the study while Section 5 presents the discussion of the results. Section 6 presents the conclusion of the research.

## 2. Literature review: understanding urban resilience in African cities

The concept of resilience is multidisciplinary in nature, and often considered as a potential strategy to address issues relating to shocks and rebounding mechanisms in the environment (Chelleri & Olazabal, 2012). Yet, resilience is defined in many ways in ecological and planning literature (Brand & Jax, 2007; Brown, 2012; Jabareen, 2013). Generally, it focuses on "the capacity of a system to experience shocks while retaining essentially, the same function, structure, feedbacks, and therefore identity" (Walker et al., 2006, p.2) and "the magnitude of disturbance that can be absorbed before the system changes its structure by changing the variables and processes that control behaviour" (Gunderson & Holling, 2002, p.4). In the context of urban planning, Lu and Stead (2013) report that Mileti (1999) was first to study urban resilience, focusing on physical infrastructure improvement to address environmental threats of, and to prevent disturbances resulting from adjusting social and institutional frameworks. It is however worth noting that the whole idea of resilience in urban planning was borrowed from ecological research, which is believed to be the first discipline to have used the concept (Jabareen, 2013).

Given its foundation in ecological research, Chelleri and Olazabal (2012, p.11) describe urban resilience within the framework of "risk and vulnerability assessments, institutional and social governance structures, resilience in (or of) different sectors (e.g., ecosystems, economy), and transformations of urban areas". Others (Adger, 2003; Campanella, 2006; Perrings, 2006) perceive urban resilience as a function of resilient and resourceful citizens necessary to achieving sustainable development – fostering adaptive capabilities and creating opportunities to maintain or achieve desirable social, economic and ecological systems (Folke et al., 2002; Holling, 2001) – through precautionary urban policy and planning regarding resource use, the reduction of vulnerability and the promotion of both present and future ecological integrity (Darkwah & Cobbina, 2014).

Presently, cities in Africa and many other developing regions are at the crossroads of emerging global challenges including

multiple financial, economic, population, energy crises, climate change impacts, hunger, income inequality, rapid urban population growth, and food insecurity (Cobbinah & Aboagye, 2017; Cobbinah et al., 2015; Ernstson, Lawhon, & Duminy, 2014; Harrison & Rubin, 2016; Lawhon, Ernstson, & Silver, 2014; Parnell, Simon, & Vogel, 2007; United Nations Department of Economic and Social Affairs/Population Division UNDESA/PD, 2012; World Economic & Social Survey, 2013). Other challenges include social and infrastructural vulnerabilities, and limited resources to adapt and respond to disaster events (Cain, 2014; Dodman, Leck, Rusca, & Colenbrander, 2017; Frigerio, 2016; Pelling & Wisner, 2012; Pieterse & Simone, 2013; United Nations Human Settlement Programme [UN-HABITAT, 2011]). It is unquestionable that urgent and concerted approaches are required to address these challenges. Unfortunately, many including Cobbinah et al. (2015) and Cohen (2006) believe that the capacity of African countries – in terms of resources and personnel to help implement urban resilience strategies – to fully respond and adapt to these challenges is threatened.

Evidence of this threatened capacity is an estimated increase in urban poverty in Africa by more than 40% by 2020 (UN-HABITAT, 2010). Complicating matters further, Africa's urban population which is about 1.3 billion is projected to more than double by 2050 (UNDESA/PD, 2012). In such a situation, the future of urban Africa appears gloom and doom as these global challenges become widespread. Potts (2009) has already reported that rapid urban population growth is compounding economic hardships in cities of La Cote d'Ivoire and Burkina Faso, contributing to severe incidence of urban poverty, and making living conditions difficult and uncertain (Cobbinah et al., 2015). Also in Dar es Salaam (Tanzania), about 70% of the population live in slums or unplanned areas without basic services (Jenkins, Cumming, Scott, & Cairncross, 2014; UN-HABITAT, 2004) that have developed in areas that serve as natural defences against natural hazards like flooding (e.g. wetlands and floodplains), resulting in encroachment upon green spaces and destruction of natural defences against floods and other hazards (UNISDR, 2013). Like Dar es Salaam, many African cities face daily struggles to meet basic urban infrastructure needs including clean piped water, drainage systems and waste management (see Cobbinah & Aboagye, 2017; Cobbinah et al., 2015; Ernstson et al., 2014; Harrison & Rubin, 2016; Lawhon et al., 2014; United Nations Department of Economic and Social Affairs/Population Division UNDESA/PD, 2012; Simon, 2008; World Economic & Social Survey, 2013).

To mitigate and adapt to these challenges, the role of urban planning in building resilient cities is central (Ahern, 2011; Albers & Deppisch, 2012; Campanella, 2006; Ernstson et al., 2010; Jabareen, 2013; Lu & Stead, 2013; Poku-Boansi & Cobbinah, 2018; ICLEI, 2012; UNISDR, 2013). Research has shown that effective implementation of urban resilience strategies provides the required capacity for cities to respond and adapt to changes in their environment, economy, society, infrastructure, health, education and disasters, and it is thus consistent with the 'natural' process of urban development (Ahern, 2011; Albers & Deppisch, 2012; Campanella, 2006; Chelleri & Olazabal, 2012). Many are those who have demonstrated cities natural and inherent societal capacities to rebuild themselves in disaster management research using the concept of urban resilience (Campanella, 2006; Wallace & Wallace, 2008). Others have applied the concept of urban resilience to climate change vulnerabilities and adaptation within the urban environment (Davoudi et al., 2012; Prasad et al., 2009). Despite the positives of urban resilience, Meerow, Newell, and Stults, 2016 citing Cote and Nightingale (2012) and Nelson et al. (2009) acknowledge the growing debate as to whether resilience is always a positive concept. Meerow et al. (2016) argue that since resilience is primarily understood to mean the ability to return to a 'normal' or steady state after a disturbance, what becomes the outcome if the original state is not desirable citing poverty and dictatorship as being undesirable yet resilient. This implies that the interpretation of what is desirable or not requires normative judgments (Brown, 2013; Cote & Nightingale, 2012). Despite these insights, an emerging interest in urban resilience research is innovation and technological advancement which is critical in establishing the links between urban transformation and urban resilience (Ernstson et al., 2010).

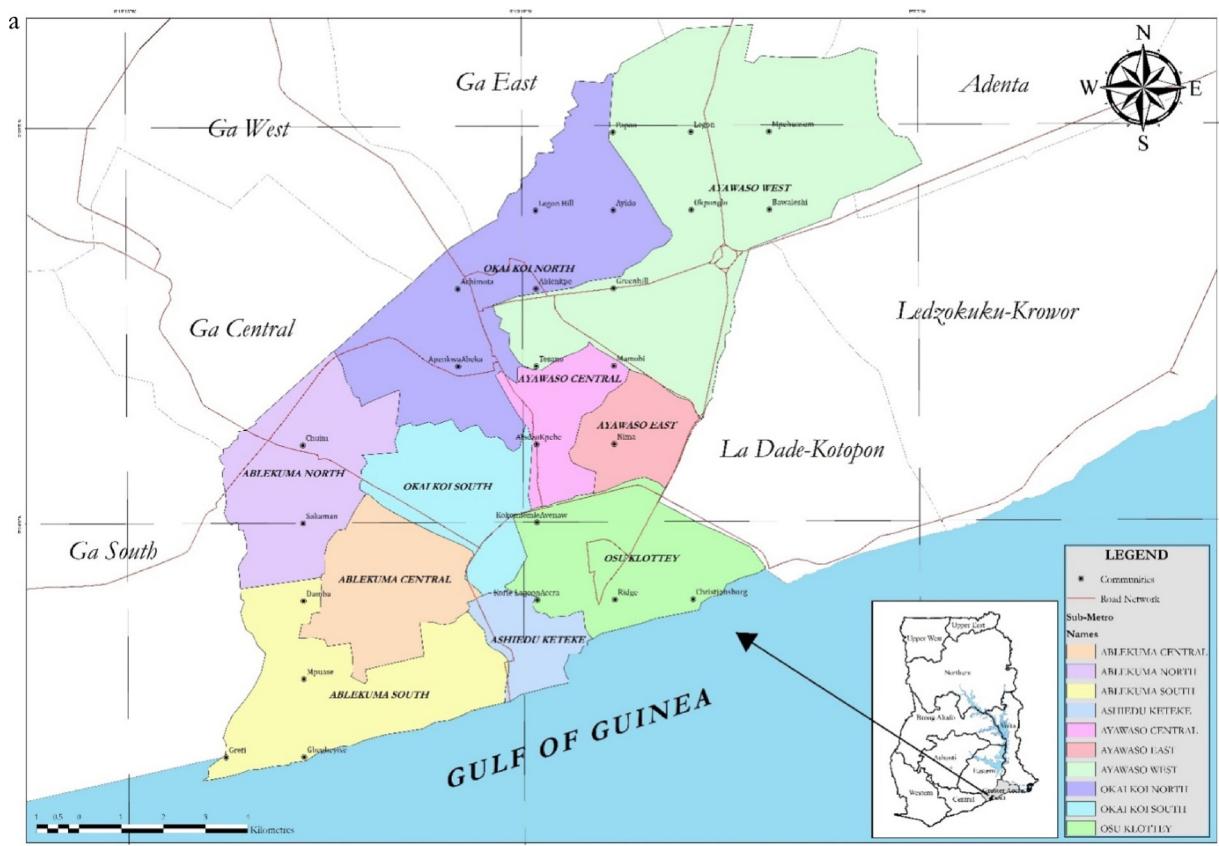
It is true that, in a variety of contexts, the aforementioned studies mainly focused on developed countries, with few studies shedding light on how to build urban resilience in African cities (e.g., Waters, 2012). However, research (e.g., Poku-Boansi & Cobbinah, 2018; UNISDR, 2013) has emphasised that the value of urban resilience is unlikely to be realised without the full engagement of city planning authorities and their instruments. This suggests that the success of building resilient cities is dependent on city planning authorities, their instruments and implementation standards. This article assesses urban resilience from the perspective of urban planners in Accra and Kumasi (Ghana) in order to ascertain: (i) their level of understanding of the concept of urban resilience; and (ii) available strategies for maintaining the identity, structure and functionality of cities in the face of global challenges.

### 3. Study setting and methods

#### 3.1. Study setting

This study focuses on two most important but vulnerable cities in Ghana. The choice of Accra and Kumasi was primarily because of their exposure to hazards like annual flood events (Amoako & Frimpong Boamah, 2015; Amoako, 2016; Korah & Cobbinah, 2016) and frequent fire outbreaks, and high population pressure (Cobbinah & Darkwah, 2016a; GSS, 2012; World Bank, 2015), proliferation of unplanned settlement or slums (Amoako & Cobbinah, 2011; Obeng-Odoom, 2010), and urban sprawl (Cobbinah & Aboagye, 2017; Cobbinah & Amoako, 2012). Compounding the aforementioned challenges are issues of ineffective urban planning institutions and land tenure system (Cobbinah & Darkwah, 2016a; Fuseini & Kemp, 2015), threats of water borne diseases (Cobbinah, Poku-Boansi, & Peprah, 2017; Songsore, 2008), and limited political commitment and undue interference in planning efforts by mainstream political and traditional systems (Cobbinah & Korah, 2016; Siiba, Adams, & Cobbinah, 2017). For example, on June 3<sup>rd</sup> 2015, Accra recorded a twin disaster of floods and fire that claimed the lives of over 150 urban residents and destroyed properties worth thousands of dollars (see Cobbinah & Darkwah, 2016a). Similar findings of flood events in Kumasi were catalogued by Owusu-Ansah (2015).

Accra, the capital city of Ghana has a population of 1,665,086 which represent 42% of the population of the Greater Accra Region



**Fig. 1a.** Location of Accra Metropolitan Area.

Source: [GSS, 2014a](#)

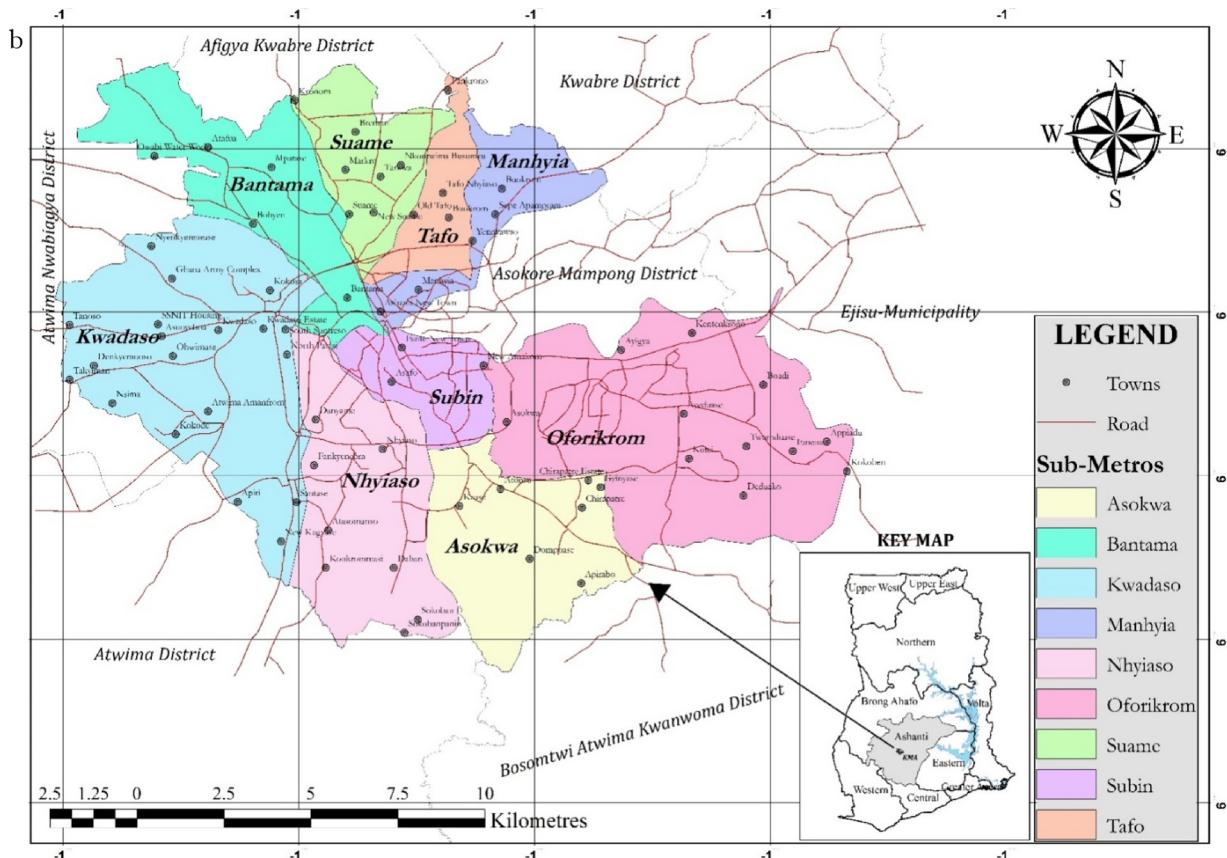
([GSS, 2014a](#)). Accra has an average household size of 3.7 and is growing at a rate of 4.2%, on a total land area of 139.674 km<sup>2</sup> (see [Fig. 1a](#)). Accra is the commercial hub of Ghana being home to several industrial establishments, financial institutions, educational and other economic establishments ([GSS, 2014a](#)). Due to the central location of Accra and the important role played in the socio-economic development of Ghana, it has been attracting people from all parts of the country and beyond to transact business ([GSS, 2014a](#)) and to find livelihood opportunities. The [GSS \(2014a\)](#) puts the proportion of migrants at 47%. The influx of people into the city has resulted in several challenges including housing ([Obeng-Odoom, 2010; Yirenkyi, 2014](#)), transportation, water and sanitation ([Amankwaa, Owusu, Owusu, & Eshun, 2014; Fiasorgbor, 2013](#)), and crime ([Owusu, Wrigley-Asante, Oteng-Ababio, & Owusu, 2015; Owusu, Owusu, Oteng-Ababio, Wrigley-Asante, & Agyapong, 2016](#)) which threaten the resilience of the city.

Similarly, Kumasi is the second largest city and remains one of the fastest growing cities in Ghana with a population of 1,730,249 ([GSS, 2014b](#)). The city has nine sub-metropolitan areas to facilitate effective administration and management (see [Fig. 1b](#)). Kumasi has a total land area of 214.3 km<sup>2</sup>, forms an important transport and commercial hub for both domestic and international traffic ([GSS, 2014b](#)). The city's role in transportation, commerce, education and administration attracts migrants from various parts of Ghana and beyond ([Cobbinah & Amoako, 2012](#)). The [GSS \(2014b\)](#) indicate that 53.7% of the population are migrants who are mostly from the northern part of the country. With a population growth rate of 5.7% per annum between 2000 and 2010 ([GSS, 2012](#)), it has been asserted that it is the fastest change in recent decades among Ghanaian cities ([Owusu-Ansah, 2015](#)).

### 3.2. Research methods

This research draws from both primary and secondary data sources. The secondary data sources were based on reviews of recent urban planning, resilience and sustainable development literature particularly on Africa (e.g., [Adger, 2003; Brand & Jax, 2007; Brown, 2012; Campanella, 2006; Cobbinah & Amoako, 2012; Jabareen, 2013; Owusu-Ansah, 2015; Perrings, 2006](#)). This provided a context to situate urban resilience thinking within a broad context of urban planning practice and sustainable development in Ghanaian cities focusing on Accra and Kumasi.

Using a qualitative research methodology, one-on-one structured in-depth interviews were conducted with urban planners working in key urban planning agencies in the selected cities. Urban planners were purposively selected and interviewed based on their availability, experience, knowledge of urban planning and resilience. This sampling was conducted by going through the list of registered planners with the Ghana Institute of Planners – the professional umbrella body of planners in Ghana, and contacting those



**Fig. 1b.** Location of Kumasi Metropolitan Area.

Source: GSS, 2014b

who are either spatial or policy planners in the two cities. The policy planners are those with a minimum of a BSc degree in Development Planning from the Kwame University of Science and Technology or BA Integrated Development Studies from the University for Development Studies all in Ghana. Similarly, the spatial planners are those with a minimum of BSc degree in Human Settlement Planning from the Kwame Nkrumah University of Science and Technology. Considering Ghana's political system and influences, and limited professional planners (see Cobbinah & Darkwah, 2016a), it is worth noting that some crevices exist as in some cases individuals with degrees in geography and other related fields (e.g., sociology) practice as planners.

A total of 75 planners registered with the Ghana Institute of Planners (GIP) were interviewed. Forty-four (44) representing 58.7% of the respondents practice their profession in Accra while thirty-one (31) representing 41.3% practice in Kumasi. The interviews asked three key questions, in addition to basic institutional questions: (i) What is the perspective of professional urban planners on the state of urban planning in Ghana? (ii) To what extent are Ghanaian cities resilient? and (iii) Do urban planners consider resilience in contemporary urban planning of Ghanaian cities? These questions were important in understanding the urban resilience concept from the perspectives of urban planners in Ghana, and further examining the available governance models for absorbing disturbances (e.g., floods, rapid urban population growth, slum development, and inadequate infrastructure) while retaining the identity, structure and functionality of Ghanaian cities. The interview time, on average, lasted 30–60 minutes, with the data collection occurring on week days, between the hours of 8 a.m. and 5 pm in June 2015.

The interviews were conducted face-to-face with the selected urban planners and in the English language. As shown in Table 1, 45.3% of the respondents were urban planners working with private planning firms across the two selected cities while 30.7% of them were working as Town Planning Officers with the Metropolitan Physical Planning Department. The remaining 24% of respondents work as Development Planning Officers with the Metropolitan Development Planning Department. Many respondents (41.3%) have been working for a period of between 5–10 years with 37.3% having experience spanning beyond 10 years. In terms of the area of speciality of respondents, 54.7% were policy planners (i.e. planners in charge of formulating and implementing socio-economic policies) while the remaining 45.3% are spatial planners (i.e. planners responsible for the preparation and management of spatial/ land use plans). It is worth mentioning that the roles of these two groups of planners are not mutually exclusive, as socio-economic policies have expression in space, and spatial planners have policy support.

Analysis of the interview transcripts and secondary data were done through the use of the NVIVO 10 software programme. Codes and categories were developed based on the interview transcripts (Rubin & Rubin, 2005). Guided by the inconsistencies that might

**Table 1**  
 Profile of Respondents.  
 Source: Field survey, June 2015

Variable	Frequency	%
<b>Place of work</b>		
Public Sector (Town & Country Planning Department)	23	30.7
Public Sector (Metropolitan Planning Department)	18	24.0
Private Planning Firms	34	45.3
<b>Years of experience</b>		
1–5 years	16	21.4
6–10 years	31	41.3
Over 10 years	28	37.3
<b>Area of speciality</b>		
Policy Planning	41	54.7
Spatial Planning	34	45.3

occur in the analysis process (Bryman & Burgess, 1994), relationships were established by merging and refining codes and categories into more conceptual categories based on common relationships. This process ensured that the agencies' perceptions and experiences of urban resilience in urban planning practice in Ghana were reflected in the final categories.

#### 4. Results

##### 4.1. Urban planners understanding of urban resilience

As discussed in Section 2, urban resilience is a slippery concept and continues to evolve. Despite its evolving nature, there are a set of common features: ability to bounce back after shocks, ability to withstand or cope with stresses or disturbances, and adaptive capability. Based on the aforementioned features, this paper examined the thinking of urban planners in the two major Ghanaian cities. As presented in Table 2, findings indicate that urban resilience in Ghana is conceptualised by urban planning professionals in four main ways: (1) withstanding disasters and emergencies; (2) management of natural resources; (3) social and institutional changes<sup>1</sup> to ensure prevention, preparation and respond to shocks; and (4) adaptive capacity of communities to recover from shocks.

In relation to withstanding disasters and emergencies, over a third (32%) of urban planning professionals reported that it remains a fundamental characteristic of the urban resilience concept. Respondents sharing this view argue that with ongoing evidence of climate change impacts and rapid and unplanned urban population growth in Ghana, cities particularly Accra and Kumasi have become increasingly prone to disasters and emergencies such as flooding, energy crisis and economic crisis. Building resilience of these cities, according to the respondents (32%) would ensure that amidst these disasters and emergencies, Ghanaian cities would still thrive and be functional. One of the respondents reported that:

“... Resilience in Accra is all about dealing with our perennial flood events which always cost lives and properties ... So building resilience in Accra means developing strategies that will make Accra both its inhabitants and infrastructure survive and remain functional after floods and other natural and man-made disasters ...” Respondent 3, Accra public sector planner, August 2015.

The above quote is a reflection of the perspectives expressed by many (32%) respondents. Considering that these respondents are in charge of planning and management of the case study cities, they were asked, based on their understanding of urban resilience, to report on attempts or efforts towards building resilience in terms of cities withstanding disasters and emergencies. Interestingly, these respondents (32%) reported decongestion and eviction exercises as frequently applied strategies in helping Ghanaian cities adequately withstand disasters and emergencies. Decongestion and eviction exercises are often carried out in Ghanaian cities by city authorities to remove perceived unauthorised structures and activities from locations deemed not habitable because of exposure to hazards. Whilst these approaches may appear effective, review of the development plans of the two cities indicates that they are largely ineffective, politically motivated, and knee-jerk responses, and are mostly applied without adequate forewarning to residents. This situation may explain the reason behind the perennial flood events and other frequent disasters (e.g., fire outbreaks) in Accra and Kumasi.

Other respondents (10.7%) interpreted urban resilience in relation to the management of natural resources in Ghanaian cities. These respondents were mainly spatial planners (town planners). In their view, although planning in Ghana is fashioned and based on legal instruments, it remains ineffective in building resilient cities in the context of natural resources management:

“Resilience is when the structure of our cities is a balance blend of natural areas and built up areas ... But look at what is happening in all our cities, even nature reserves are being converted into residential uses, Achimota forest in Accra is being encroached upon, and the city of Kumasi which used to be our garden city has lost its natural glory because of unplanned development. In such a situation, can you say that our cities are resilient? No they are not, and they can't be with this kind of

<sup>1</sup> Conscious changes in norms (e.g. cultural conventions) and formal rules (e.g. law), to address problems of coordination and cooperation in social groups, associations, organisations, and societies

**Table 2**

Urban Planners thinking of Resilience Planning.

Source: Field survey, June 2015.

Perception of Respondents	Responses (%)
Withstanding disasters/emergencies	32.0
Effective management of natural resources	10.7
Social and institutional changes to ensure prevention, preparation and respond to shocks	38.6
Adaptive capacity of communities to recover from shocks.	18.7
<b>Total</b>	<b>100.0</b>

laxity towards planning requirements" Respondents 18, Kumasi Physical Planner, September 2015.

Given the perceived rate of depletion of urban natural resources, the respondents (10.7%) were asked about their strategies to address the situation and make the cities resilient. Regrettably, all the respondents (10.7%) mentioned and emphasised that strict adherence to land use plans, often exhibiting the characteristics of master plan (e.g., static, non responsive to changes and rigid), remains a surety to recovering depleted natural resources and building resilient cities.

About 38.6% of the respondents consider resilience planning in the context of social and institutional changes. These respondents argue that putting in place the needed social and institutional changes to ensure the prevention, preparation and response to shocks in cities. According to these respondents, resilience is when cities are better prepared and equipped to deal with disasters both natural and man-made. They argue that cities are naturally bound to experience shocks, and their ability to deal with these shocks is a sign of their resilience:

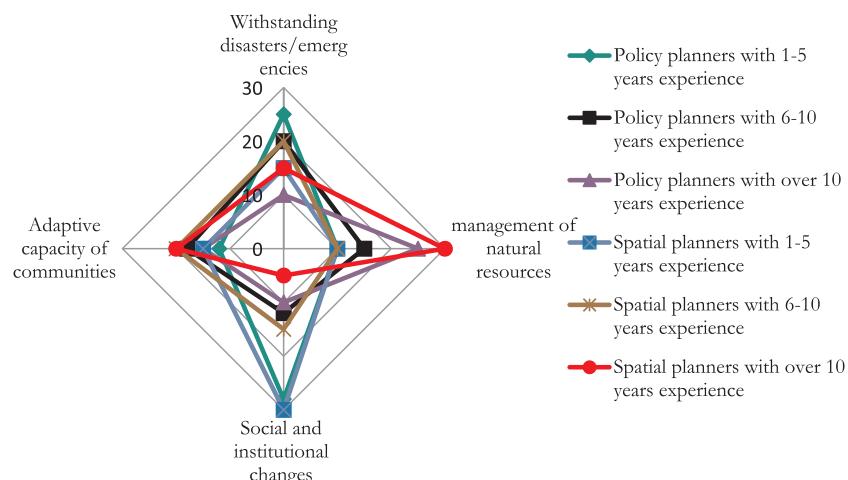
"Cities are complex sets of systems that are highly dynamic and unpredictable ... So how cities are able to absorb the impacts and move on in an event of disasters or shocks such as economic crisis, floods, terrorism etc indicate their level of resilience..." Respondent 31, Development Planning Officer, Accra, August 2015

In responding to questions on social and institutional preparedness, the respondents mentioned the creation of the National Disaster Management Organisation (NADMO) as an agency responsible for dealing with shocks and disasters. Although as part of NADMO's responsibilities, it is supposed to educate, prepare and respond to communities on issues of shocks and disturbances, field observations show that NADMO's role has been reduced to supply of relief items in an event of disasters or shocks. In such a situation, although the representatives understanding of resilience may reflect the concept's basic characteristics, efforts towards building resilience appear ineffective.

Some (18.7%) respondents also consider resilience as an adaptive capacity of communities. These respondents indicate that cities have to become adaptable to the changes rapid urban population growth and climate change impacts generate in the urban environment (e.g., changes in economic activities, weather patterns, policies, etc.):

"... Resilience is the gradual process where cities and their citizens become adaptable to socio-economic, environmental and physical changes that characterised urban development..." Representative 6, Accra Public Sector Metropolitan Planner, August 2015.

This analysis seems to suggest that urban planners in Ghana have limited understanding of the comprehensiveness of the resilience concept. Interview findings show that respondents' interpretations of the concept were largely based on or influenced by their

**Fig. 2.** Factors influencing planners' perspective on urban resilience.

Source: Based on Field Survey, June 2015.

places of work, years of experience and field of specialisation (see [Fig. 2](#)). For instance, public sector respondents with Town and Country Planning Department (physical planning department) who have 5–10 years and above working experience explained urban resilience concept in relation to management of natural resources as compared to public sector respondents with the Metropolitan Development Planning Department who emphasised adaptive capacity policy interventions (see [Fig. 2](#)).

However, efforts put in place to ensure that Ghanaian cities become resilient in the face of global and local challenges are weak and ineffective. Similarly, there seems to be a disconnect between conceptual understandings of the concept and its application. As a consequence, although urban planners are responsible for preparing and implementing metropolitan, municipal and district development plans, none of the representatives made reference to strategies in the development plans that focus on building resilience.

#### 4.2. Urban planners strategies for building resilient cities

In this study, the respondents were asked to identify ways their institutions can or are promoting or building resilience in Ghanaian cities. Four strategies remain dominant: involvement of stakeholders in planning process; consideration of risks assessment strategies in planning practice; availability of information systems; protection of urban ecosystems; and upgrading of informal settlements. These issues are discussed further in the ensuing sections.

##### 4.2.1. Stakeholder involvement in planning process

Building urban resilience is a complex and multifaceted process which requires adequate engagement and participation of diverse stakeholders to efficiently deliver resilient cities. In this case, the quality of stakeholder coordination and collaboration has ramifications for planning for urban resilience. The majority of respondents (67 out of 75) emphasised that stakeholder involvement in urban planning is weak and poor in the two cities. The Land Use and Spatial Planning Act of 2016 (Act 925) stipulates that urban planning functions of Ghanaian cities are vested in the Metropolitan Planning Authority (MPA) in each city. The Authority is expected to initiate and prepare metropolitan development plans and settlement structure plans in consultation with other stakeholders (e.g., local residents, Lands Commission, Utility Services Providers etc.). Yet, the interviews with the public sector planners (41 out of 75) show that stakeholder consultation is minimally applied in the preparation of development and policy plans at the city level.

While the Metropolitan Planning Department respondents (13 out of 18) indicated that some agencies (e.g., Ghana Education Service, Ghana Health Service) are involved in the planning process, they admitted that urban residents, a principal stakeholder, are not involved. Although some reasons were proffered by the respondents (13 out of 18) for the non-involvement of urban residents (e.g., limited knowledge of planning issues among residents, their involvement will lead to bureaucratic and slow process), issues of urban planning and urban resilience are all about urban residents, making their participation critical. This approach of stakeholder involvement in the planning process advocates a careful consideration for involvement by creating an avenue where all those concern can participate in the urban planning process especially urban residents.

It is worth mentioning that this approach of stakeholder involvement is not new, yet the problem is intractable. The respondents with the private planning firms (29 out of 34), while admitting the importance of stakeholder consultation in the planning process, maintained that stakeholder involvement is time consuming and expensive:

“... The reality in our planning environment is that you can't involve all stakeholders ... where will you get the money from? Even the time to do that is not there ... so we normally consult one or two people and we are done ... Representative 18, Accra, Private Planning Firm.

##### 4.2.2. Incorporating risk assessment in urban planning

Findings from the interviews show that urban planning practice in Ghanaian cities proceeds without consideration for risk assessment. This perspective was emphasised by the public sector planners (i.e. Town and Country Planning Department, and Metropolitan Planning Department respondents) who indicated that the preparation of development plans and policy documents does not include issues of risk. Hence, the majority of them (34 out of 41) admitted that they do not incorporate risk assessment in their planning practice. This situation is occurring despite the knowledge that the more institutions and urban residents know about their risks through risk assessment and evaluation, the more they can learn about how they can adapt and withstand shocks. In exploring this response further, the respondents (34 out of 41) variously mentioned that planners' inability to incorporate risk assessment in their planning activities was primarily due to limited financial and inadequate human resource capacity to undertake comprehensive risk assessment prior to plan preparation.

##### 4.2.3. Development of risk information system

The inability of planning authorities to undertake risk assessment has led to the absence of a risk information system. Interview findings show the absence of a risk information system for urban planning across Ghanaian cities as all respondents mentioned it. Some respondents (28 out of the 75) played the blame game by indicating that the failure of institutions such as National Disaster Management Organisation (responsible for assisting disaster affected persons and communities with relief items), Ghana Meteorological Agency (in charge of weather and climate data), and National Commission for Civic Education to perform their roles well has contributed to the absence of a risk assessment information.

The integration of urban planning with a reliable risk information management system has not received attention from the political, financial and planning authorities in Ghana. As a result, urban planners are unable to predict the extent of disasters, especially flooding and assess risks. The failure of having a risk information system is increasing the vulnerability of Ghanaian cities.

#### 4.2.4. Protection of vulnerable areas and ecosystems

The need to protect vulnerable and ecologically sensitive areas in Ghanaian cities through urban planning is central to urban resilience. This is primarily because of the increased destruction of ecologically sensitive areas such as wetlands and streams in Ghanaian cities. Even though all the planners interviewed acknowledged the need to protect vulnerable areas and the ecosystems, the majority of them (56 out of 75) recognised the protection of vulnerable areas and ecosystems as a major challenge in their urban planning practice. They argued that the practice of non-enforcement of planning regulations and indiscipline on the part of some developers has resulted in development of unauthorised structures in waterways and wetlands. Planning legislations such as the Local Government Act of 1992 (Act 462) and the Land Use and Spatial Planning Act of 2016 (Act 925) have provisions that empower planning authorities to enforce planning requirements. For example, Section 94 of Act 936 provides for the enforcement in respect to unauthorised development while Section 95 ensures compliance to approved planning schemes. Subsections 2, 3 and 4 of Act 936 state as follows:

- (1) If the owner of the land fails to show sufficient cause why the development should not be prohibited, altered, abated, removed or demolished, the District Planning Authority may carry out the prohibition, abatement, alteration, removal or demolition and recover any expenses incurred from the owner of the land as if it were a debt due to the District Planning Authority.
- (2) A District Planning Authority may issue an enforcement notice that demands the immediate stoppage of work that is being carried out contrary to this Act or the terms of an approved development plan.
- (3) A person who fails to comply with a notice to stop work commits an offence and is liable on summary conviction to a fine of not less than two hundred penalty units and not more than four hundred penalty units or to a term of imprisonment of not less than three months and not more than six months or to both the fine and term of imprisonment and in the case of a continuing offence to an additional fine of not more than four penalty units for each day that the contravention continues, after written notice has been served on the offender.

Interference from officialdom (politicians and traditional leaders) was another major reason mentioned by the public sector respondents (39 out of 41) as accounting for the inability to ensure the implementation of the provisions in the Act. It is unsurprising that the respondents indicated that, in many instances, local chiefs take advantage of the administrative inefficiencies in official land regulatory framework and subdivide remnants of urban forests, wetlands, riparian lands and open spaces. This situation weakens efforts towards resilience.

## 5. Discussion

Urban resilience is an unfolding concept, and human responses to it – both practical and intellectual – will no doubt vary with actual realities. Two decades ago, a typical laundry list of debatable questions with reference to urban resilience would have seemed rather different and much less urgent than issues about the need for resilience that agitate Africa particularly Ghana today. Twenty years ago, it was difficult, for example, to interest urban studies scholars in Ghana – the country with several complex urban planning issues and highly prone to the impacts of climate change – in the topic of urban resilience. Instead, everyone was absorbed in debating rapid urban population growth and its consequences. Although there is little doubt that a close relation exists between rapid urban population growth and urban resilience, this relation is far from being as simple as it is often treated in the literature on the subject.

Notably in Ghanaian cities, the tendency to assume a simple relation derives from the rather mistaken notion that rapid urban population growth is the cause of all urban problems and that addressing rapid urban population growth would automatically lead to urban resilience. While in parts of urban Ghana this may be true to a greater or lesser extent, urban resilience, as discussed earlier, transcends urban population growth dynamics to include natural influences. In this context, a greater intellectual and empirical rigour is required to provide policy considerations and implications for building resilient cities in Ghana.

Findings show that urban planners in Ghana generally have limited understanding of the comprehensiveness of the concept of resilience. This is not only a reflection of the perspective expressed by the respondents, but indeed a growing characteristic of African cities reported by several studies (see Cobbinah & Darkwah, 2016c; Quagrainé, 2011; Poku-Boansi, 2011). These studies show that the absence of resilient cities is reflected in the rapid and unplanned nature of urban population growth in African cities, coupled with generally weak planning systems, which has created an avenue where people develop without consideration to the planning requirements. As a result, Quagrainé (2011) reports that Kumasi, the garden city of West Africa today has less than 7% of its total land area (214.3 km<sup>2</sup>) occupied by natural resources (open spaces, nature reserves, streams etc.). The destruction of green areas, water resources and nature reserves is occurring in Kumasi and Accra at a time when several scholars (see Berkowitz et al., 2003; Janssen et al., 2005; Nelson et al., 2009) have argued that these resources (e.g. wetlands) are biodiversity hotspots and deliver a wide range of ecosystem services relating to climate change mitigation and urban resilience. This implies that resilience planning, should as a matter of priority, make the protection of vulnerable areas (e.g., green spaces) and ecosystems a key requirement.

Unfortunately, strategies (e.g., adherence to land use plans) towards the realisation of urban resilience are weak and ineffective. However, the suggested strategies, particularly adherence to land use plans has been variously criticised across Africa for being non-inclusive, non-pro-poor, static and not reflecting the aspirations of city residents (Cobbinah & Darkwah, 2016b; Cobbinah, Poku-Boansi, & Asomani-Boateng, 2016; Watson, 2009). In this case, it may be reasonable to argue that depletion of urban natural resources would continue in the foreseeable future if this ‘unworkable’ strategy is perceived as appropriate in building resilient cities. Similarly, despite the several cases of flooding, risk assessment is not considered in urban planning practice. For example, it has been

widely reported in literature that Accra, has had a long history of flood hazards (see Douglas et al., 2008; Rain, Engstrom, Ludlow, & Antos, 2011; Amoako & Frimpong Boamah, 2015) with the phenomenon having become a major issue since the early 1930s. Rain et al. (2011) have indicated that the city of Accra experienced significant flood disasters in 1973, 1986, 1995, 1999, 2001, 2002, and 2010. The 2015 flood occurrence claimed the lives of over 150 residents (Amoako, 2016). Additionally, Owusu-Ansah (2015) discusses extensively the incidence of flooding in Kumasi. Residents of these Ghanaian cities have uncertain livelihood as flooding and related events have become an annual occurrence (Amoako & Frimpong Boamah, 2015; Campion & Venzke, 2013; Owusu-Ansah, 2015).

As argued by Bahadur, Ibrahim, and Tanner (2010), the world is experiencing a 'resilience renaissance'. This demands effective approaches to shaping the future of cities to become responsive to both natural and man-made changes. Multidisciplinary approaches required in building resilience in Ghana mentioned by the urban planning respondents, including stakeholder engagement, information sharing, and risk assessment are urgently needed. These multidisciplinary approaches are consistent with international literature advocating urban resilience (see Bechler, Davidse, & Deppisch, 2014; Coaffee, 2008; Brand & Jax, 2007). Regrettably, findings show that despite the mentioning of these approaches by the urban planners, there are no clear resilience principles in their guidelines used for plan preparation and unavailability of resilience toolkits to help in urban planning. This is crucial especially as the incidence of disaster (e.g. flooding) has become an annual occurrence. This article draws attention to the lack of resilience thinking in urban planning guidelines in Ghanaian cities. This finding confirms those of Chirisa, Bandaiko, Mazhindu, Kwangwama, and Chikowore, (2016) that mainstreaming resilience planning needs to be guided by policies and legislative frameworks to help in integration with development activities at all levels.

Even though urban resilience has been recognised by urban planners as necessary requirement in Ghana's urban planning practice, little has been done to make resilience desirable and in integrating resilience philosophy into development plans and policies. It is true that urban resilience is shaped by who defines the agenda, whose resilience is being prioritised and who benefits or loses as a result (Meerow et al., 2016). Regrettably in Ghana, urban resilience agenda is largely defined and determined largely by international organisations. There is therefore the need to have concerted efforts in pursuing urban resilience in Ghanaian cities through the consideration of the suggested approaches.

The analysis and prescriptions described in this article reinforce and extend the findings reached by urban resilience scholars discussed earlier. Previous to this research, empirical research to examine the applicability of the urban resilience concept in Africa has been based on quantitative case studies and reviews (e.g., studies conducted by Poku-Boansi & Cobbinah, 2018; Waters, 2012; Cobbinah & Darkwah, 2016c; Chelleri & Olazabal, 2012). By arriving at similar conclusions using a qualitative case study research design, this study adds another layer of support for their veracity, and it increases the confidence urban planners can have in the notion that urban resilience, when applied, is important in the planning and management of African cities. However, further research is required to understand the infrastructural capacities and needs of Ghanaian and African cities towards urban resilience.

## 6. Conclusion

This study examined urban planners' perspective of, and strategies towards resilient cities in the Ghanaian cities of Accra and Kumasi. The results provide weak practical support, in terms of understanding and strategies, for the idea that the application of urban resilience concept contributes to effective urban planning where the aspirations of urban residents are considered, their interests advocated, and the natural environment safeguarded. The results also indicate that despite the limited understanding of the comprehensiveness of the urban resilience concept, planners acknowledged that the concept is important in this era of rapid and unplanned urban population growth and varied climate change impacts. In a typical jurisdiction, urban resilience amongst old and experienced public sector urban planners, beyond policy documents, is overly concentrated on protection of natural resources and green areas in the urban setting. However, the analysis suggests that urban planning practice in both Accra and Kumasi is characterised by haphazard development leading to eviction without forewarning, destruction of nature reserves, and land litigations. Undoubtedly, other key variables such as undue political influence, low capacity of planning agencies, and limited political commitment would play a similar role in disposing Ghanaian cities (Accra and Kumasi) to vulnerability elements (e.g., floods). This situation may help explain why knowledge on resilience is limited, and efforts towards resilience are weak.

Understanding and applying the resilience concept into the planning process would provide planners with an important tool for increasing their practical effectiveness without being overly influenced politically. Many of the issues facing urban planning in Ghana, and Africa are inherently addressed in the resilience concept such as disaster management, protection of pristine and fragile urban environment, and public participation and information sharing. By applying the resilience concept, planners can increase public understanding of planning issues, and the threats of climate change impacts and rapid urban population growth, and engage concerned groups of the need for action. With a more in-depth understanding and widespread application of the resilience concept, planners can develop effective policies and plans, reduce the potential for non implementation of plans and policies, and increase the likelihood for achieving some level of consensus among planning related institutions and urban residents. This, in turn, can ease individual institutional efforts towards resilience to advocacy coalitions that will collaborate to ensure that resilience principles and proposals are acted upon.

The first step planners in Ghana can take to ensure deeper knowledge of the resilience concept is simply to develop their capacity in ways of building resilient cities. Beyond that, planners can integrate the urban resilience concept into urban planning, and induce greater public awareness by ensuring that urban planning is meaningful to residents and reflects their aspirations. Planners make urban planning meaningful by constantly engaging with urban residents to understand their problems, and providing them with information about issues and alternative courses of action, as well as creating opportunities for dialogue among urban residents and

between residents and planners on resilience issues. This can occur in the media (both popular and social media), community meetings, and through other means (e.g., committee representation by urban residents). The key is for urban planners to strengthen efforts to educate themselves, and the urban residents, and learn from their experiences.

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